

APT Center Published in US Naval Institute Proceedings

We would like to recognize Drs. Ron Triolo and Bob Kirsch for completing this interview with the US Naval Institute Proceedings. Their efforts resulted in a mention and description of one of the APT Center projects (in collaboration with another VA Center of Excellence) in a recent story about the new developments in prosthetic research in their article titled: *The Next Generation*. Below you will find an excerpt of the article and we are also attaching a full version of the article for your review.

Microchips in Robotic Limbs

At the same time, researchers at the VA's Advanced Platform Technology Center of Excellence in Cleveland have been experimenting with a system that implants the electrodes in the remaining portion of a patient's arm or leg so the mechanism can sense the minute electrical activity that he makes when he intends to move his limb. Much like the one involving brain signals, the impulses are fed into a tiny microprocessor that controls a robotic limb. Scientists say the same kind of system can be used in reverse to give the patient the kind of sensory feedback he would receive from a living arm: the ability to sense touch, temperature, vibration, and position—that is, how far he has moved his arm and where it is now in relation to the rest of his body. The artificial limb would be stronger and better able to endure heat, cold, water, and humidity, and would change its shape and stiffness to correspond to the condition of the wearer's tissues. "Developing prosthetics that have a direct connection to the nervous system is going to be a quantum leap in providing patients with far great capability," says Dr. Ronald J. Triolo, a biomedical engineer who is executive director of the Cleveland VA's Advanced Platform Technology Center. While such techniques are still in the developmental stage, they're apt to be ready for use by patients in five years, he says. "What we're trying to do here is to jump-start advances in materials, microelectronics, and neural interfaces and apply them to prosthetics."

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